

## **REMARKS**

### **Status of the Claims**

Claims 1-64 are remain in the case. No new matter is added by this amendment.

### **Claim Rejections 35 U.S.C. § 112, second paragraph**

Claims 1, 3, 4, 21, 24, 40, 43, and 58 is rejected under 35 U.S.C. § 112, second paragraph, as being unclear.

On response, the above amendment is believed to cure these grounds for rejection.

### **Claim Rejections 35 U.S.C. § 103**

Claims 1-57 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller et al. (US 5,727,002) in view of Ha et al (US 7,136,353) and further in view of Vincent Roca and Benoit Mordelet (Improving the Efficiency of a Multicast File Transfer Tool based on ALC), and R. Brian Adamson and Joseph P. Macker (Quantitative Prediction of NACK-Oriented Reliable Multicast (NORM) feedback).

Claims 58, 59, 60, 61 and 63 have been rejected under 35 USC 103(a) as unpatentable over USP 6,141,785 to C. H. Hur, issued October 31, 2000, filed September 2, 1998, of record (Hereafter, Hur) in view of Roca and Mordelet, of record.

### **Response To Claim Rejections 35 U.S.C. § 103**

#### **Claims 1-57**

Claims 1-57 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller et al. (US 5,727,002) in view of Ha et al (US 7,136,353) and further in view of Vincent Roca and Benoit Mordelet (Improving the Efficiency of a Multicast File Transfer Tool based on ALC), and R. Brian Adamson and Joseph P. Macker (Quantitative Prediction of NACK-Oriented Reliable Multicast (NORM) feedback).

The Applicant's remarks in the previous amendment filed October 27, 2008 are incorporated herein by reference, distinguishing the Applicant's claims over the Miller, Roca and Adamson references.

The Examiner cites in the Miller (US 5,727,002) , Figure 1 and Miller's paragraph in the specification at column 4, line 50 to column 5, line 19, as allegedly disclosing the Applicant's claimed retransmission of the missing data from another device different from the original sending device. Miller's specification at column 4, line 50 to column 5, line 19 reads as follows:

Referring to FIGS. 1 and 2, in accordance with the invention, quick and reliable data transmission from a source or server 20 to one or more recipients or receivers or clients 22.sub.1, 22.sub.2, . . . , 22.sub.N over a communications link 24 comprises (step 10) transmitting the data (e.g., a file), which is in the form of a plurality of frames, over the link 24 to one or more of the recipients 22 until the entire file (i.e., all of the plurality of frames) have been transmitted over the link 24. As the frames are being transmitted, frame negative acknowledgments from one or more of the recipients 22 are received via the link 24 (step 10). If, after the entire file has been transmitted over the link 24, the negative acknowledgments indicate that certain frames need to be retransmitted over the link 24 (step 12), only those certain frames are retransmitted (step 14). As those certain frames are being retransmitted over the link 24, frame negative acknowledgments from one or more of the recipients 22 are received via the link 24 (step 14). This process is then repeated as many times as necessary until no more frames need to be retransmitted, as indicated by steps 12, 14, and 16. In step 16, the server 20 determines whether "done" messages have been received at the server 20 by all of the recipients 22. If a recipient is "done," it means that recipient has received all of the frames and has sent to the server 20 a "done" message to so indicate. "Done" recipients continue to send "done" messages to the server until they see their name in a "done list" which the server sends out as a notification to all "done" recipients (i.e., those listed in the "done list") to stop sending "done" messages to the server. After a predetermined period of time or after a predetermined event, the server 20 sends a status request to all unresponsive recipients 22, i.e., recipients from which it has not received a "done" message (step 18). The initial transfer of the entire file and each of the subsequent transmissions of error frames are generally referred to herein as a "round" or "pass".

The Miller reference is directed to the server 20 that keeps track of which frames of data in a file it has previously transmitted, were not received by respective recipients 22 reporting NACKs for those missing frames. Different recipients 22 indicate in their respective NACKs, having missed receiving different combinations of frames of data. Only Miller's server 20, after

having transmitted the plurality of frames of data in the file to the plurality of recipients 22, engages in retransmitting the missing frames that were specifically reported by some of the recipients 22 in their respective NACKs. The Miller reference discloses in Figure 1 and in the cited paragraph at column 4, line 50 to column 5, line 19 that only the server 20 retransmits the missing data. There is no disclosure or suggestion in Miller of a recipient 22(1) sending to another recipient 22(2) different from the server 20, an indication of missing or mangled data and the other recipient 22(2) retransmitting the missing data, as claimed by the Applicant.

There is no disclosure or suggestion in Miller of a receiving device sending to another receiving device different from the original sending device, an indication of missing or mangled data and the other receiving device retransmitting the missing data, as claimed by the Applicant.

The Ha et al (US 7,136,353) reference is cited by the Examiner for its alleged disclosure of quality of service management for multiple connections including the feature of scheduling a data packet for delivery, citing Figure 3 and column 8, line 51 to column 9, line 7.

There is no disclosure or suggestion in the Ha reference of a receiving device sending to another receiving device different from the original sending device, an indication of missing or mangled data and the other receiving device retransmitting the missing data, as claimed by the Applicant.

The Roca and Mordelet reference (Improving the Efficiency of a Multicast File Transfer Tool based on ALC), is cited by the Examiner for its alleged disclosure of sending different rates in different layers. However, there is no disclosure or suggestion in the Roca and Mordelet reference of a receiving device sending to another receiving device different from the original sending device, an indication of missing or mangled data and the other receiving device retransmitting the missing data, as claimed by the Applicant.

The Adamson and Macker reference (Quantitative Prediction of NACK-Oriented Reliable Multicast (NORM) feedback), is cited by the Examiner for its alleged disclosure of multiple data rates and layers. However, there is no disclosure or suggestion in the Adamson and Macker reference of a receiving device sending to another receiving device different from the

original sending device, an indication of missing or mangled data and the other receiving device retransmitting the missing data, as claimed by the Applicant.

Thus, Claims 1-57 are patentable over the combination of Miller et al. (US 5,727,002) in view of Ha et al (US 7,136,353) and further in view of Vincent Roca and Benoit Mordelet (Improving the Efficiency of a Multicast File Transfer Tool based on ALC), and R. Brian Adamson and Joseph P. Macker (Quantitative Prediction of NACK-Oriented Reliable Multicast (NORM) feedback). These references taken either singly or in combination, fail to disclose or suggest receiving device sending to another receiving device different from the original sending device, an indication of missing or mangled data and the other receiving device retransmitting the missing data, as claimed by the Applicant.

**Claims 58, 59, 60, 61 and 63**

Claims 58, 59, 60, 61 and 63 have been rejected under 35 USC 103(a) as unpatentable over USP 6,141,785 to C. H. Hur, issued October 31, 2000, filed September 2, 1998, of record (Hereafter, Hur) in view of Roca and Mordelet, of record.

The Applicant's remarks in the previous amendment filed October 27, 2008 are incorporated herein by reference, distinguishing the Applicant's claims over the Hur and Roca and Mordelet references.

The Examiner cites in the Hur reference (USP 6,141,785), column 6, lines 54-63, as allegedly disclosing the Applicant's claimed sending an acknowledgement of transmission of missing and mangled data to said sending device and to another receiving device with FEC for repair of damaged packets or packets that have not been received. Hur's specification at column 6, lines 54-63 reads as follows:

If the receiver finds out and confirm the damage of one or more data among the message, it can request the retransmission of necessary data and here the NACK is used for that. NACK is transmitted through IP-Multicast group, and other host notices the request and prevents the transmission for the same request by using the damping technique.

Hur's specification at column 6, lines 54-63 discloses that a receiver issues a NACK to an IP multicast server group and either the host server or another host in the group retransmits the missing or mangled data to the receiver.

In contrast, in the Applicant's claimed invention, the receiver sends NACKs to the sending device and to other receivers, but not to other servers in an IP multicast group. In the Applicant's claimed invention, the "other receiving device" is a device that has received the data from the sending device. This is disclosed in the Applicant's Figure 6 and in paragraph 58, which reads, in part: "Upon receiving the NACK message, in step S3 the receiver 5 that has correctly received the original data packet from the source 1 transmits the data packet again as a multicast packet." The Applicant's claimed invention requires only a single sending device and multiple receiving devices, as shown in Figure 6.

The Examiner cites in the Hur reference (USP 6,141,785), column 3, lines 29-57, column 6, lines 54-63, and column 7, line 20-34, as allegedly disclosing the Applicant's claimed retransmission of the missing data from another receiving device different from the original sending device. Hur's specification at column 3, lines 29-57 reads as follows:

The present invention to accomplish the object described above is characterized in that it comprises the steps of: a first step in which the rereceiver receives the data and heartbeat from the source, analyzes them and checks whether the error occurred to the data reception; a second step in which in case where the error occurred to the data reception as a result of check at first step, the receiver re-receives the data and heartbeat from the source, and in case where the error did not occur, the receiver checks whether it received the data packet outside the sequence number zone; a third step in which in case of having received the data packet inside the sequence number zone, as a result of check at second step the receiver shifts to the step for analyzing the data and heartbeat, and in case where the receiver received the data packet outside the sequence number zone, the receiver actuates the error correction mechanism; a fourth step in which in case where the receiver receives any message within the threshold for retransmission request from the source after actuation of said error correction mechanism, the receiver shifts to the step of analyzing the received data and heartbeat, and in case where the receiver did not receive anything, the receiver sends the query message to the multicast group to query the status of source ; and a fifth step in which the source transmits the heartbeat to respond to the query, and in case where there is an error in the data packet received from the source, the receiver shifts to the step of receiving the data and heartbeat from the source, and in case where there is no more error to the data packet, the procedure is terminated.

Hur's specification at column 7, line 20-34 reads as follows:

The partial loss or damage of data occurs at the time of data transmission processing. The receiver requests the retransmission of them, and one of source and peer-hosts retransmits them. When the source does not transmit data for a certain period, it transmits the heartbeat message instead.

Two models for data retransmission is a method in which the source is responsible for retransmission and a method in which all hosts are responsible for retransmission. The former is a method in which the source responds to all retransmission requests and if the source can not retransmit for some reason, the peer-hosts take charge of retransmission.

The latter is a method in which the hosts (including the source itself) listen to the source and take charge of retransmission.

Hur's specification at column 3, lines 29-57, column 6, lines 54-63, and column 7, line 20-34 discloses that either the host server in an IP multicast server group or another host server in the IP multicast group retransmit the missing or mangled data to the receiver. As disclosed in Hur, a peer-host receives the data from the same source as the host, but not directly from the host, according to column 7, lines 20-34. Further, column 12, lines 59-62 in Hur reads: "As described above, the present invention is an error control method for transmitting the multimedia data between multiple points and multiple users with high reliability and can be used in various application fields.

In the Applicant's claimed invention, the receiver, in contrast, receives a retransmission of said missing or mangled data from said other receiving device, but not from other servers in an IP multicast group. In the Applicant's claimed invention, the receiver sends NACKs to the sending device and to other receivers, but not to other servers in an IP multicast group. In the Applicant's claimed invention, the "other receiving device" is a device that has received the data from the sending device. This is disclosed in the Applicant's Figure 6 and in paragraph 58, which reads, in part: "Upon receiving the NACK message, in step S3 the receiver 5 that has correctly received the original data packet from the source 1 transmits the data packet again as a multicast packet." The Applicant's claimed invention requires only a single sending device and multiple receiving devices, as shown in Figure 6.

There is no disclosure or suggestion of the Applicant's claimed receiving a retransmission of said missing or mangled data from said other receiving device in the same or different networks to complete the data packet and a data transmission session.

Thus, Claims 58, 59, 60, 61 and 63 are patentable over the combination of the Hur reference in view of in view of Roca and Mordelet. These references taken either singly or in combination, fail to disclose or suggest a receiving device sending to another receiving device different from the original sending device, an indication of missing or mangled data and the other receiving device retransmitting the missing data, as claimed by the Applicant.

**CONCLUSION**

No new matter has been included in this amendment. Entry of the amendment; allowance of the claims and passage to issue of the application are requested.

**AUTHORIZATION**

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 50-4827, Order No. 1004289-156US (4208-4172).

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 50-4827, Order No. 1004289-156US (4208-4172).

Respectfully submitted,  
Locke Lord Bissell & Liddell LLP

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By:



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John E. Hoel  
Registration No. 26,279  
(202) 857-7887 Telephone  
(202) 857-7929 Facsimile

**Correspondence Address:**

**Customer Number: 85775**  
Locke Lord Bissell & Liddell LLP  
3 World Financial Center  
New York, NY 10281-2101